



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,529	09/26/2003	Manish Vaishya	2003P14814 US	1198
7590	08/25/2004		EXAMINER	
Elsa Keller Siemens Corporation Intellectual Property Department 170 Wood Avenue South Iselin, NJ 08830			FAULK, DEVONA E	
			ART UNIT	PAPER NUMBER
			2644	
			DATE MAILED: 08/25/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/672,529	VAISHYA, MANISH
Examiner	Art Unit	
Devona E. Faulk	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 26 September 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-20 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) Paper No(s)/Mail Date. _____.
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____.

DETAILED ACTION***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1,2,7,11 and 16** are rejected under 35 U.S.C. 102(b) as being anticipated by Pfaff (EP 0 479 367 A2).

Regarding **claim 1**, Pfaff discloses a speaker (28); a controller for generating a control signal that drives a speaker, wherein said signal is based on at least one current vehicle operating condition, a determination of a first sound pressure for each order of sound generated by said engine during a run up of said engine and a determination of a second sound pressure computer for each of a plurality of operating conditions of said engine, wherein said signal controls each of order of sound generated by said engine independently to drive said speaker to generate an audio output to control said noise (see abstract; Figure 1; page 4, line 1-page 5).

Regarding **claim 2**, Pfaff discloses wherein a signal is also based on a frequency response of a microphone and a speaker used in computing said first and second sound pressures (page 4, lines 8-34).

Regarding **claim 7**, Pfaff further discloses controller (26) including amplifiers, filters, A/D converters, D/A converters, frequency multipliers, counters and other known input/output signal conditioning circuitry (page 4, lines 42-48).

Regarding **claim 11**, Pfaff discloses a speaker (28); a controller for generating a control signal that drives a speaker, wherein said signal is based on at least one current vehicle operating condition, a determination of a first sound pressure for each order of sound generated by said engineer during a run up of said engineer and a determination of a second sound pressure computer for each of a plurality of operating conditions of said engine, and a determination of a frequency response of a microphone and speaker used in determining said first and second sound pressures, wherein said signal controls each of order of sound generated by said engine independently to drive said speaker to generate an audio output to control said noise (see abstract; Figure 1; page 4, lines 1-page 5 line 21).

Regarding **claim 16**, Pfaff further discloses controller (26) including amplifiers, filters, A/D converters, D/A converters, frequency multipliers, counters and other known input/output signal conditioning circuitry (page 4, lines 42-48).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 3, 12 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfaff (EP 0479 367 A2) in view of Duckworth et al. (U.S. Patent 5,627,529).

Claim 3 claims the system according to claim 1, wherein said vehicle operating conditions are obtained by a transceiver. As stated above apropos of claim 1, Pfaff meets

all elements of that claim. Therefore, Pfaff meets all elements of claim 3 with the exception of the claimed matter. Duckworth teaches of a vehicle control system including transceiver that obtains vehicles operating conditions from a vehicle databus (See Abstract). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention in order to have the ability to selectively transmit control signals.

Claim 12 claims the system according to claim 11, wherein said vehicle operating conditions are obtained by a transceiver. As stated above apropos of claim 11, Pfaff meets all elements of that claim. Therefore, Pfaff meets all elements of claim 12 with the exception of the claimed matter. Duckworth teaches of a vehicle control system including transceiver that obtains vehicles operating conditions from a vehicle databus (See Abstract). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention in order to have the ability to selectively transmit control signals.

Regarding claim 20, Pfaff discloses a speaker (28); a controller for generating a control signal that drives a speaker, wherein said signal is based on at least one current vehicle operating condition, a determination of a first sound pressure for each order of sound generated by said engine during a run up of said engine and a determination of a second sound pressure computer for each of a plurality of operating conditions of said engine, and a determination of a frequency response of a microphone and speaker used in determining said first and second sound pressures, wherein said signal controls each of order of sound generated by said engine independently to drive said speaker to generate an audio output to control said noise (see abstract; Figure 1; page 4, lines 1-page 5 line 21); a sensor for providing a reference signal indicative of a camshaft position, wherein said reference signal is utilized in determining said first pressure (page 3, line 55- page 4,

line8). Although he teaches on the above named elements, Pfaff fails to disclose a transceiver as claimed. However, the concept of a transceiver for providing said at least one current vehicle operating condition to a controller was well known in the art as taught by Duckworth. Duckworth teaches of a vehicle control system including transceiver as claimed (See Abstract) (column 3, lines 1-34). Thus, it would have been obvious to one of ordinary skill in the art to use Duckworth's concept of a transceiver in order to have the ability to selectively transmit control signals.

5. **Claims 4,5,13 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfaff (EP 0479 367 A2) in view of Todter et al. (U.S. Patent 5,937,070).

Claim 4 claims system of claim 1, wherein said signal includes a gain factor for attenuating sound. As stated above apropos of claim 1, Pfaff meets all elements of that claim. Therefore, Pfaff meets all elements of claim 3 with the exception of the claimed matter. Pfaff further discloses controller (26) including amplifiers, filters, A/D converters, D/A converters, frequency multipliers, counters and other known input/output signal conditioning circuitry (page 4, lines 42-48) and a speaker (28) that can obviously include either a gain factor or apply some enhancement to the signal. Todter discloses the concept of a signal including a gain factor for attenuating sound (column 12, lines 26-30). Thus it would have been obvious to one of ordinary skill in the art to use Todter's concept of a signal including a gain factor for attenuating sound for the benefit of maintaining a positive phase margin.

Claim 5 claims the system of claim 1, wherein said signal includes applying a gain factor for enhancing said sound. Todter discloses applying a gain factor for enhancing said sound. As stated above apropos of claim 1, Pfaff meets all elements of

that claim. Therefore, Pfaff meets all elements of claim 5 with the exception of the claimed matter. Pfaff further discloses controller (26) including amplifiers, filters, A/D converters, D/A converters, frequency multipliers, counters and other known input/output signal conditioning circuitry (page 4, lines 42-48) and a speaker (28) that can obviously include either a gain factor or apply some enhancement to the signal. Todter discloses the concept of applying a gain factor for enhancing sound (column 12, lines 26-30). Thus it would have been obvious to one of ordinary skill in the art to use Todter's concept of a signal including a gain factor for attenuating sound for the benefit of maintaining a positive phase margin.

Claim 13 claims system of claim 11, wherein said signal includes a gain factor for attenuating sound. As stated above apropos of claim 11, Pfaff meets all elements of that claim. Therefore, Pfaff meets all elements of claim 13 with the exception of the claimed matter. Pfaff further discloses controller (26) including amplifiers, filters, A/D converters, D/A converters, frequency multipliers, counters and other known input/output signal conditioning circuitry (page 4, lines 42-48) and a speaker (28) that can obviously include either a gain factor or apply some enhancement to the signal. Todter discloses the concept of a signal including a gain factor for attenuating sound (column 12, lines 26-30). Thus it would have been obvious to one of ordinary skill in the art to use Todter's concept of a signal including a gain factor for attenuating sound for the benefit of maintaining a positive phase margin.

Claim 14 claims the system of claim 11, wherein said signal includes applying a gain factor for enhancing said sound. Todter discloses applying a gain factor for enhancing said sound. As stated above apropos of claim 11, Pfaff meets all elements

of that claim. Therefore, Pfaff meets all elements of claim 14 with the exception of the claimed matter. Pfaff further discloses controller (26) including amplifiers, filters, A/D converters, D/A converters, frequency multipliers, counters and other known input/output signal conditioning circuitry (page 4, lines 42-48) and a speaker (28) that can obviously include either a gain factor or apply some enhancement to the signal. Todter discloses the concept of applying a gain factor to enhance sound (column 12, lines 26-30). Thus it would have been obvious to one of ordinary skill in the art to use Todter's concept of a signal including a gain factor for attenuating sound for the benefit of maintaining a positive phase margin.

6. Claims 6, 10, 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfaff (EP 0479 367 A2) in view of Kinoshite et al. (U.S. Patent 5,245,664).

Claim 6 claims the system of claim 1, wherein said signal includes a correction factor for each of said operating conditions. As stated above apropos of claim 1, Pfaff meets all elements of that claim. Therefore, Pfaff meets all elements of claim 6 with the exception of the claimed matter. Kinoshite discloses the concept of a signal including a correction factor for an operating condition (column 5, line 66-column 6, line 25). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Kinoshite's concept of a signal including a correction factor as claimed in order to account for any differences between various signals.

Claim 10 claims the system of claim 1 further including a time delay between said engine operating conditions. As stated above apropos of claim 1, Pfaff meets all elements of that claim. Therefore, Pfaff meets all elements of claim 10 with the exception of the claimed matter. Kinoshite discloses the concept of including a time

delay between said engine operating conditions (column 6, lines 15-25). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Kinoshite's concept of including a time delay as claimed in order to account for any differences in signal propagation times.

Claim 15 claims the system of claim 11, wherein said signal includes a correction factor for each of said operating conditions. As stated above apropos of claim 1, Pfaff meets all elements of that claim. Therefore, Pfaff meets all elements of claim 15 with the exception of the claimed matter. Kinoshite discloses the concept of a signal including a correction factor for an operating condition (column 5, line 66-column 6, line 25). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Kinoshite's concept of a signal including a correction factor as claimed in order to account for any differences between various signals.

Claim 19 claims the system of claim 11 further including a time delay between said engine operating conditions. As stated above apropos of claim 11, Pfaff meets all elements of that claim. Therefore, Pfaff meets all elements of claim 19 with the exception of the claimed matter. Kinoshite discloses the concept of including a time delay between said engine operating conditions (column 6, lines 15-25). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Kinoshite's concept of including a time delay as claimed in order to account for any differences in signal propagation times.

7. **Claims 8 and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfaff (EP 0479 367 A2) in view of Cairns (U.S. Patent Application 2002/0097884).

Claim 8 claims the system of claim 1, wherein said controller decomposes said first and second sound pressures and generates look-up tables. As stated above apropos of claim 1, Pfaff meets all elements of that claim. Therefore, Pfaff meets all elements of claim 8 with the exception of the claimed matter. Pfaff teaches of a controller decomposing sound pressures. Cairns teaches of a variable noise reduction based on vehicle conditions having look-up tables. He further teaches of generating look-up tables (paragraph 15). Thus it would have been obvious to one of ordinary skill to use Cairns's concept of generating look-up tables in order to have better representative data of the

Claim 17 claims the system of claim 1, wherein said controller decomposes said first and second sound pressures and generates look-up tables. As stated above apropos of claim 1, Pfaff meets all elements of that claim. Therefore, Pfaff meets all elements of claim 17 with the exception of the claimed matter. Pfaff teaches of a controller decomposing sound pressures. Cairns teaches of a variable noise reduction based on vehicle conditions having look-up tables. He further teaches of generating look-up tables (paragraph 15). Thus it would have been obvious to one of ordinary skill to use Cairns's concept of generating look-up tables in order to have better representative data of the vehicle.

8. **Claims 9 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfaff (EP 0479 367 A2) in view of Kuo (U.S. Patent 5,940,519).

Claim 9 claims the system of claim 1, wherein said controller utilizes an algorithm that uses a Nyquist criterion. As stated above apropos of claim 1, Pfaff meets all elements of that claim. Therefore, Pfaff meets all elements of claim 8 with the exception of the claimed matter. Pfaff teaches of using algorithms, but fails to specify

using a Nyquist criterion (page 7, lines 6-18). Kuo discloses an active noise control system that utilizes an algorithm that uses a Nyquist criterion (column 10, line 61-column 11, line 18). The Nyquist frequency and theorem are well known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to use Kuo's concept of using a Nyquist criterion in order to prevent aliasing.

Claim 18 claims the system of claim 11, wherein said controller utilizes an algorithm that uses a Nyquist criterion. As stated above apropos of claim 11, Pfaff meets all elements of that claim. Therefore, Pfaff meets all elements of claim 18 with the exception of the claimed matter. Pfaff teaches of using algorithms, but fails to specify using a Nyquist criterion (page 7, lines 6-18). Kuo discloses an active noise control system that utilizes an algorithm that uses a Nyquist criterion (column 10, line 61-column 11, line 18). The Nyquist frequency and theorem are well known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to use Kuo's concept of using a Nyquist criterion in order to prevent aliasing.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,692,052 to Tanaka et al. discloses an engine noise control apparatus.

U.S. Patent 6,363,156 to Roddy discloses an integrated communication system for a vehicle.

U.S. Patent 6,449,369 to Carme et al. discloses a method and device for hybrid active attenuation of vibration, particularly of mechanical, acoustic or similar vibration.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 703-305-4359. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DF



FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER